

ABSTRACT

A temperature sensing device can be embedded in a memory circuit in order to sense the temperature of the memory circuit. One oscillator generates a temperature variable signal that increases frequency as the temperature of the oscillator increases and decreases frequency when the temperature of the oscillator decreases. A temperature invariant oscillator generates a fixed width signal that is controlled by an oscillator read logic and indicates a temperature sense cycle. An n-bit counter is clocked by the temperature variable signal while the fixed width signal enables/inhibits the counter. The faster the counter counts, the larger the count value at the end of the sense cycle indicated by the fixed width signal. A larger count value indicates a warmer temperature. A smaller count value indicates a colder temperature.